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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/329,456	06/10/1999	MICHAEL PIERRE CARLSON	AT9-99-149	8115

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EXAMINER

TANG, KENNETH

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 09/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/329,456

Applicant(s)

CARLSON ET AL.

Examiner

Kenneth Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☒ Claim(s) 6 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 7/22/03, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Objections

2. Claims 6 and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Reallocation of resources is a major aspect of a cleanup process.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-3, 6, 11, 13-16, 19, 24, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles (US 6,314,446 B1) in view of Hasbun (US 5,640,529).

4. Referring to claims 1, 11, 14, 24, 27, and 28, Stiles discloses a data processing system for monitoring a plurality of related threads with the following steps:

- polling the plurality or related threads for status information (*"polls the monitored threads and second, it allows the updating of the display, that is the created window for status."*, col. 3, lines 44-67);
- responsive to receiving the status information, determining whether a thread within a plurality of related threads is inactive (*"The method displays the resulting status to the user in an intuitive manner with four configurations indicating: process running normally, process running intermittently, process stopped normally, and process halted unexpectedly."*, see Abstract);

Stiles fails to explicitly teach:

- responsive to a determination that a thread within the plurality of related threads is inactive, initiating cleanup processes for the thread based on the status information.

However, Hasbun teaches that when threads are in a period of inactive status, a clean-up is performed (*"Performing clean-up during these inactive periods is usually adequate to maintain sufficient free memory for the needs of host central processing unit 52."*, col. 3, lines 35-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of cleanup during inactive periods for the reason of increasing efficiency (*"Execution of clean-up states during the periods of time when host CPU 52 is inactive is generally adequate to maintain sufficient free memory because CPU 52 generally reads and writes in bursts."*, col. 8, lines 54-57).

5. Referring to claims 2 and 15, Stiles teaches responsive to receiving the status information, storing the status information (*"memory management which maintains the status of tasks running on the system and which schedules the execution of tasks"*, col. 2, lines 12-17).

6. Referring to claims 6 and 19, it is rejected for the same reasons as stated in the rejection of claim 1. It is inherent that resources are reallocated during the cleanup/garbage collection. This claim does not further limit its independent claim.

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7. **Claims 3, 5, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles (US 6,314,446 B1) in view of Hasbun (US 5,640,529), and further in view of Nation (US 6,233,599).**

8. Referring to claims 3 and 16, Stiles in view of Hasbun fails to explicitly teach polling, determining, and the initiating steps to be performed all in a single thread. However, Nation teaches using a single task to enable multiple operations (*“at least one general purpose and/or floating point register set originally architected for single task processing by the processing unit partitioned into a plurality of register subsets wherein at least one of the register subsets is an active thread subset, and at least one of the register subsets is an overlapping register subset associated with more than one thread, said partitioned register set and said overlapping register subset enabled to adapt the processing unit originally architected for single thread processing to enable multithreaded operations on said computer”*, see Claim 13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of having multiple operations into a single thread for organizational purposes. It is more simplistic for related operations to be grouped together in one thread.

9. Referring to claims 5 and 18, Stiles in view of Hasbun fails to explicitly teach having the initiating step identify active threads and inactive threads within the plurality of related threads. However, Nation discloses a “thread identifier” that can identify if a thread is active or inactive (*Figure 9, 974, and col 22, lines 23-36*). Stiles in view of Hasbun also fails to explicitly teach terminating the inactive threads. However, it would be obvious to delete inactive threads as a

“clean up” mechanism for the system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Nation to the existing system for the reason of being able to identify if the threads are active or inactive so that the system will know when to carry out the cleanup process.

10. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles (US 6,314,446 B1) in view of Hasbun (US 5,640,529), and further in view of Cejtin (US 5,745,703).

Referring to claims 4 and 17, Stiles in view of Hasbun fails to explicitly teach having the single thread as part of a class. However, Cejtin discloses “threads” as a object-type of a class called “first-class objects” (*col 12, lines 59-60*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature of Cejtin to the existing system for the reason of improving the data processing system by having a higher-order abstraction for building remote references or address spaces (*higher-order abstraction, remote references, address spaces, col 1, lines 59-67, and col 2, lines 1-3*).

11. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles (US 6,314,446 B1) in view of Hasbun (US 5,640,529), and further in view of Anschuetz (US 5,305,455).

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12. Referring to claims 7 and 20, Stiles in view of Hasbun fails to explicitly teach having the plurality of threads be printer threads. Anschuetz discloses a data processing system, which uses “a thread to control a printer” (*col 3, lines 42-45*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use printer threads for the threads in the existing system so that it can have a means for outputting information on a printer.

13. Claims 8 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles (US 6,314,446 B1) in view of Hasbun (US 5,640,529), and further in view of Yee (US 5,471,576).

14. Referring to claims 8 and 21, Stiles in view of Hasbun fails to explicitly teach having the plurality of threads be video threads. Yee discloses a data processing system, which uses “video threads in the application program” (*col 4, lines 44-49*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use video threads for the threads in the existing system so that it can have a means for outputting information onto video.

15. Claims 9, 10, 12, 22, 23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles (US 6,314,446 B1) in view of Hasbun (US 5,640,529), and further in view of Win (US 6,182,142).

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16. Referring to claims 9, 10, 22, and 23, Stiles in view of Hasbun fails to explicitly teach implementing this system with a **virtual machine** or **Java virtual machine**. Win teaches using a **“Java Virtual Machine”** (col 25, lines 50-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a virtual machine or Java virtual machine to the existing system for the reason of utilizing system independence; a Java application will run the same in any Java VM, regardless of the hardware and software underlying the system.

17. Referring to claims 12 and 25, the reference of Win discloses an event, which is an occurrence of a period of time (*“within a pre-determined period of time”*, col 10, lines 39-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of an event having a period of time for the reason of being able to have task scheduling, which is vital to the system.

18. **Claims 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles (US 6,314,446 B1) in view of Hasbun (US 5,640,529), and further in view of Jennings et al. (hereinafter Jennings) (US 5,542,088).**

19. Referring to claims 13 and 26, Stiles in view of Hasbun fails to explicitly teach cleanup for an event that is an error. However, Jennings teaches cleaning up from a normal exit event, a cancel event, or an error event (*“The wrapper handles action cleanup from a normal exit, an*

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processing error or a cancel.", col. 12, lines 12-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of cleaning up an event that is an error for the reason of improving the integrity of the system by minimizing the amount of errors it has in it.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 9:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Grant can be reached on (703) 308-1108. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 746-7140.

Kt
September 9, 2003


MAJID A. BANANKHANI
PRIMARY EXAMINER